

Memo

To: Maryland Health Services Cost Review Commission (HSCRC)
From: Dan Kinber and Bailey Orshan
Date: 2/28/2020
Subject: Literature Review Summary for HCAHPS Improvement Interventions

The Maryland Health Services Cost Review Commission (HSCRC) requested a literature review that identifies successful Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) improvement strategies implemented by other states or individual hospitals.

Mathematica performed the literature review in three steps. First, by performing targeted searches of peer-reviewed journals, we identified a set of hospitals across the country that implemented interventions that were associated with a statistically significant improvement in their performance on one or more HCAHPS domains. Our search also led us to several publications that aggregate, summarize, and recommend best practices that hospitals can employ to improve HCAHPS scores based on existing academic literature and surveys of healthcare providers and consumers. Second, we conducted searches of grey literature describing state-based payment programs and quality initiatives aimed at improving hospitals' performance on HCAHPS scores or improving patient experience in general; this search yielded two examples. Third, we conducted searches of peer-reviewed journals and found a set of measures that potentially correlate with HCAHPS results.

Hospital-level interventions that improve HCAHPS scores

Many articles and resources exist on ways for hospitals to improve their HCAHPS scores. In addition to several articles describing general strategies to improve patient experience, below we highlight articles that show a statistically significant association between interventions and HCAHPS performance, cover a range of HCAHPS domains and, for the most part, were published in the last several years. Also, some of the studies were highlighted in a systematic review of interventions to improve hospital satisfaction because they met a quality filter score on the "27-item Downs and Black coding scale."ⁱ

In a study of organizational factors that may improve patient experience, interviews of staff and patient representatives were conducted at eight geographically spread out organizations that included three inpatient hospitals known for such improvements. The study identified the following processes for improving patient-centered care: (i) strong, committed senior leadership, (ii) clear communication of strategic vision, (iii) active engagement of patient and families

throughout the institution, (iv) sustained focus on staff satisfaction, (v) active measurement and feedback reporting of patient experiences, (vi) adequate resourcing of care delivery redesign, (vii) staff capacity building, (viii) accountability and incentives and (ix) a culture strongly supportive of change and learning.ⁱⁱ

Another publication examined Mayo Clinic’s quality improvement model, including “sustaining a culture of accountability for acting on service quality data to improve the patient experience.” Patient experience improvement is attained by “putting valid, reliable, timely, meaningful and actionable data, including qualitative data obtained through patient comments, focus groups and direct observation, in the hands of accountable process owners and front-line staff that create the experience.” The process includes input from a variety of clinical and non-clinical personnel obtained in Patient Experience committee meetings. The gathered data are subsequently used by leadership as well as frontline staff to improve their communication and interpersonal skills.ⁱⁱⁱ

One publication provided a summary of current literature that lays out best practices that hospitals can employ to improve physician-patient communication, specifically targeting the HCAHPS survey.^{iv} The article summarized four studies^{v,vi,vii,viii} and found these Best Practices (presented on p. 2 of the publication) summarized in Table 1:

Table 1: Best Practices that hospitals can employ to improve HCAHPS

Demonstrating Courtesy and Respect	Best Practices for Improving Listening	Best Practices for Explaining
<ul style="list-style-type: none"> • Knock before entering a patient’s room. • Greet the patient by name. • Introduce yourself and your role. • Review the chart prior to entering the room. • Treat every concern brought up as important and explain why you prioritize certain concerns over others in the hospital. • Ask the patient for permission to conduct a physical examination. • At the end of an encounter, ask for questions in an open-ended fashion • End the hospital stay on a positive note. 	<ul style="list-style-type: none"> • Avoid interrupting the patient. • Take notes so they know you take their concerns seriously. • Summarize key points of a discussion. • Pay attention to nonverbal cues, and acknowledge emotions. • Sit at the bedside. • Use social touch to convey empathy. • Be comfortable with silence: allow 5 seconds to resume conversation when there is a pause. • Watch your body language; don’t appear hurried, bored or fidgety; don’t cross your arms. 	<ul style="list-style-type: none"> • Avoid medical jargon. • Explain physical examination findings as you are conducting the examination. • Use the teach-back method to ensure understanding; utilize open-ended questions. • Explain procedures/testing before they are ordered/ performed. • Write out important information, if needed (use whiteboards in rooms). • Give patients a way to contact you with any questions after the hospital stay.

Several studies identified successful hospital-level interventions that improved hospitals’ performance on the HCAHPS Communication with Nurses and Doctors domain.

- The University of Utah Health Care (UUHC) hospital developed a scripted, standardized method for physician-patient communication that included “education of internal medicine house staff on HCAHPS and communication expectations ... during a 15-minute weekly morning lecture focused on quality improvement” and “laminated cards

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with rounding expectations ... developed and distributed to all house staff and hospitalists” and reviewed weekly at the beginning of each rotation. These communication practices and scripted questions were also reviewed and modeled on rounds by attending physicians. HCAHPS data were studied at least monthly at hospitalist meetings and led to reinforcement of expectations and commitments. The study assessed the percentage of patients who answered “Always” to all HCAHPS questions regarding physician-patient communication. Among the intervention group, the percentage of patients who answered “Always” increased from 56% to 63% ($P = 0.014$, $N = 1021$) while it remained stable for the control group (65% to 66%, $P = 0.6$, $N = 6718$).^{ix}

- Cleveland Clinic developed an 8-hour experiential communication skills training called R.E.D.E to Communicate: Foundations of Healthcare Communication based on “a conceptual framework for teaching and evaluating relationship-centered healthcare communication that emphasizes genuine relationship as a vital therapeutic agent.” Clinicians participated in “a series of interactive didactic presentations, live or video-based skill demonstrations, and small group skills practice sessions [of] empirically validated communication skills ... aligned with the three phases of the model – Establishment, Development, and Engagement.” The study found significant improvement in the HCAHPS Respect domain adjusted mean ... in the intervention versus control groups (91.08 vs. 88.79, $P = 0.02$) after the course.^x
- Internal Medicine [IM] physicians at Ronald Reagan UCLA Medical Center received “patient satisfaction education through a conference, real-time individualized patient satisfaction score feedback, monthly recognition, and incentives for high patient-satisfaction scores.” As part of the intervention, trained student volunteers “surveyed hospitalized patients with an optional and anonymous survey regarding specific resident physician’s communication skills” and the survey results were emailed to the interns and residents in real time. After the intervention, the percentage of patients who responded positively to all 3 physician-related HCAHPS questions increased by 8.1% in the IM cohort (from 65.7% to 73.8%) and by 1.5% in the control cohort (from 64.4% to 65.9%, $P=0.04$). Additionally, the percentage of patients responding that they would definitely recommend this hospital increased by 7.1% in the IM cohort (from 82.7% to 89.8%) and 1.5% in the control group (from 84.1% to 85.6%, $P=0.02$).^{xi}

Finally, several publications showed potentially promising results on multiple HCAHPS domains.

- Trinity Medical Centre (Birmingham, AL) introduced a pulsed xenon ultraviolet (PX-UV) light systems device to clean and decontaminate the hospital, which allowed for thoroughly disinfected hospital rooms in 10–15 minutes. In addition to improvement on HCAHPS scores for cleanliness from 76% before the intervention to 83% after the intervention ($P=0.02$) and the overall rating of the hospital from 76% before the

intervention to 88% after the intervention, all the other measured categories that included communication and staff responsiveness improved as well.^{xii}

- Another study surveyed leadership at 1,600 acute care hospitals on whether the following strategies were used: use of a dedicated discharge planner or discharge coordinator, create discharge summary prior to discharge and share with outpatient provider, schedule follow-up appoints for all patients prior to discharge, use electronic tools to reconcile discharge medications, and use formal discharge checklist to document components of the discharge process. After categorizing responders into low-strategy, mid-strategy, and high-strategy groups based on quartiles of the number of strategies that used, the study found that compared with low-strategy hospitals, high-strategy hospitals had a higher overall rating (+2.23 percentage points (pp), $P < 0.001$), higher recommendation score (+2.5 pp, $P < 0.001$), and higher satisfaction with discharge process (+1.35 pp, $P = 0.01$) and medication communication (+1.44 pp, $P = 0.002$).^{xiii}
- At an academic medical center (Pittsburgh, PA), a study of spine surgery patients first implemented a “surgical flight plan to standardize communication to patients” and then used “SmartRoom technology to provide patients with tailored education videos and informed providers of viewing progress.” The interventions aimed to engage patients in their discharge plan and help them be more actively involved in their care while at the hospital resulted in a significant improvement in the Communication with Nurses (72% after both interventions vs. 58% pre-intervention, $P = 0.027$) and Communication About Medicines HCAHPS domains scores (81% after both interventions vs. 64% after 1st intervention only, $P = 0.029$).^{xiv}
- Finally, at the Mayo Clinic (Rochester, MN), for patients admitted for a neurology service, key driver analysis identified care transition scores as drivers of the global hospital score. The Global score was composed of 2 global perception rating measures (patient’s overall hospital rating and likelihood that the patient would recommend the hospital to friends and family). Communication about medicines was also a key driver for patients with cancer and neurologic diagnoses other than neurodegenerative, stroke or epilepsy. The study recommends that “interventions to improve care transitions should address patient and family caregiver preferences in deciding post-discharge health care needs, ensure that patients have a good understanding of the purpose of each of their medications, and acknowledge patient and caregiver responsibilities regarding management of their health on discharge.”^{xv}

State-based payment programs and quality initiatives

Limited information exists on interventions or incentive programs at the state-level to improve HCAHPS scores. In 2006, the Massachusetts General Physicians Organization launched a quality incentive program for about 1,700 of its physicians. Incentive payments could be as much as 2 percent of a physician’s annual income. The program provided performance targets to eligible physicians for three quality measures every six months (physicians could have different

sets of measures as determined by their specialties). Over thirteen six-month terms, the program used 130 different quality measures. Completion of training on clinical communication was a measure that applied to all physicians through 2010. Physicians were offered four different classes with topics ranging from “ways to become more empathetic in providing health care” to finding “balance between learning from problems related to quality and safety and assuming accountability for errors.” Ninety-one percent of physicians attended at least one communications class. Following the training, a composite score based on patients’ responses to HCAHPS physician communication-related questions became a required quality measure. After the training intervention, patients answering “always” on the questions referring to physicians’ communication increased from 79.6 percent in the baseline period in 2009 to 81.1 percent in 2010 and to 82 percent in 2012—a significant improvement.^{xvi}

In 2014, AHMC Healthcare System (AHMC) consisting of seven community hospitals in Southern California, implemented the Preventative Care Survey Program (PCSP), a phone-based survey administered to patients 24 to 48 hours after their discharge from a hospital and before HCAHPS. The PCSP questions focused on transitional care from hospital to home, such as prescription filling, home medication use, doctor’s follow-up appointments, and hospital follow-ups if necessary and allowed patients to comment freely on each question, whereas for HCAHPS surveyors are required to apply the CMS-approved script for each HCAHPS questionnaire. Hospitals used the results from the PCSP to develop patient experience improvement plans.^{xvii} AHMC’s HCAHPS scores increased from 65% in 2014 to 71% in 2016, rising above California’s average of 69%.

Measures correlated with HCAHPS

Table 2 lists a set of measures that are potentially correlated with performance on the HCAHPS questionnaire according to published studies:

Table 2: List of Measures Correlated with HCAHPS Scores

Measure Category	Measure Description
Nurse-to-patient days	Using national HCAHPS data and the annual survey of the American Hospital Association a study found that compared with hospitals in the bottom quartile of the ratio of nurses to patient-days, those in the top quartile had a somewhat better performance on the HCAHPS survey. ^{xviii}
Patient Safety Indicators (PSIs)	Using Hospital Quality Alliance data from 927 hospitals, a study found that the relationship with infections due to medical care was statistically significant for four HCAHPS measures, including a clean and quiet hospital environment, responsiveness of medical staff, communication with nurses, and communication with doctors. ^{xix}
Readmissions	In a study using samples ranging from 1,798 hospitals for acute myocardial infarction to 2,562 hospitals for pneumonia, higher hospital-level patient satisfaction scores (overall and for discharge planning) were independently associated with lower 30-day readmission rates for acute myocardial infarction, heart failure, and pneumonia. ^{xx}

	Using data of all acute care hospitals available in Hospital Compare (2014), the study found that hospitals with better performance on Responsiveness of Hospital Staff HCAHPS domain were significantly more likely to have lower 30-day readmissions for all conditions. ^{xxi}
Mortality	Using clinical data on 6,467 patients with AMI treated at 25 hospitals, “quarterly patient satisfaction data were obtained from patient surveys administered by Press Ganey Associates. After controlling for a hospital’s overall guideline adherence score, higher patient satisfaction scores were associated with lower risk-adjusted inpatient mortality.... Satisfaction with nursing care was the most important determinant of overall patient satisfaction. ^{xxii}
	A study of 651 hospitals identified admissions for gynecologic cancer-related surgeries and assigned hospitals into HCAHPS score terciles. In-hospital mortality was lower in hospitals in the top HCAHPS score terciles compared to bottom HCAHPS score tercile. ^{xxiii}
Length of Stay	In a study of 391 patients at a single hospital who had undergone lumbar spine surgery, a greater than expected length of stay was associated with a decreased likelihood of a top-box score for the HCAHPS survey items on doctor listening and pain control. ^{xxiv}
Bed size	A study used HCAHPS scores and number of hospital beds from Hospital Compare, American Hospital Directory, and Magnet Hospitals web sites. Hospital size was significantly associated with patient satisfaction such that larger size was associated with lower satisfaction. Hospital size was most strongly associated with less patient satisfaction on the following HCAHPS items: receiving help as soon as needed, room and bathroom cleanliness, and doctor communication, whereas nurse communication was the one modifiable dimension that was associated with more favorable ratings in larger hospitals. ^{xxv}
	Using HCAHPS scores obtained from 3,195 hospitals listed on Hospital Compare and US Census data, the study found that ‘number of hospital beds’ was a negative predictor of HCAHPS composite score. ^{xxvi}
Private Rooms	A comparison of HCAHPS scores for patients undergoing total joint arthroplasty at NYU Langone Orthopedic Hospital (New York, NY) showed that patients in private rooms were more likely to report a top-box score for overall hospital rating, hospital recommendation, and quietness. ^{xxvii}
Age of Plant	Using data on 1,911 hospitals, a study found an inverse association between a hospital’s age of plant and specific elements of VBP performance. Older hospitals defined through higher building asset accumulated depreciation per bed were associated with lower Patient Experience scores. ^{xxviii}
Case Mix	For 36,551 patients at an academic center, complex cases had lower Star scores (dichotomized [“high” v. “low”] HCAHPS measures’ top-box and Star-rating methodologies). ^{xxix}
Race	Using HCAHPS data from 2,684 hospitals, a study compared within-hospital differences in experiences based on race. Hispanics and African Americans consistently reported more positive experiences than non-Hispanic Whites with some differences by domain. ^{xxx}
Socio-Economic Status	Using HCAHPS scores form 15,789 patients at an academic medical center, HCAHPS Top Box scores were compared to patient socioeconomic status based on the median income of the ZIP Code for each patient. Socioeconomic status was “negatively

	<p>associated with patients' overall hospital rating ... and willingness to recommend hospital.... When controlling for the current adjustment factors (age, education, primary language, health status, and emergency admission), living in a ZIP Code with a median household income above \$100,000 per year was independently associated with worse Top Box Scores for the categories of Overall Hospital Rating, Recommend Hospital... Communication about Medicine, Cleanliness of Hospital Environment, and Quietness of Hospital Environment.”^{xxxi}</p>
<p>HCAHPS Response Rate</p>	<p>Using HCAHPS data from Hospital Compare for patients discharged 2008 – 2017 nationwide, one study found a moderate positive correlation between HCAHPS response rate and scores across every HCAHPS domain. The strongest relationships were shown for Responsiveness of Staff and Overall Rating domains, with the correlation value of 0.5. This suggests that “the HCAHPS data being collected are not capturing a representative sample of the patient population for these hospitals.” Additional research examined response rates of a hospital that switched from mail to telephone-based HCAHPS survey starting in July 2015. Comparing the data in the July 2014 – June 2015 period with the July 2015 –June 2016 period, the study showed an increase in HCAHPS response rate from 27% to 35%. The change also demonstrated a statistically significant [7-point] increase to the Overall Rating score (z=4.88, p <.001).^{xxxii}</p>

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